Stream Channel Protection

Morphological disruptions primarily due to changes in hydrology

- Channel widening and downcutting
- Increased streambank erosion
- Shifting sediment bars
- Imbedding of stream sediments
- Past channelization


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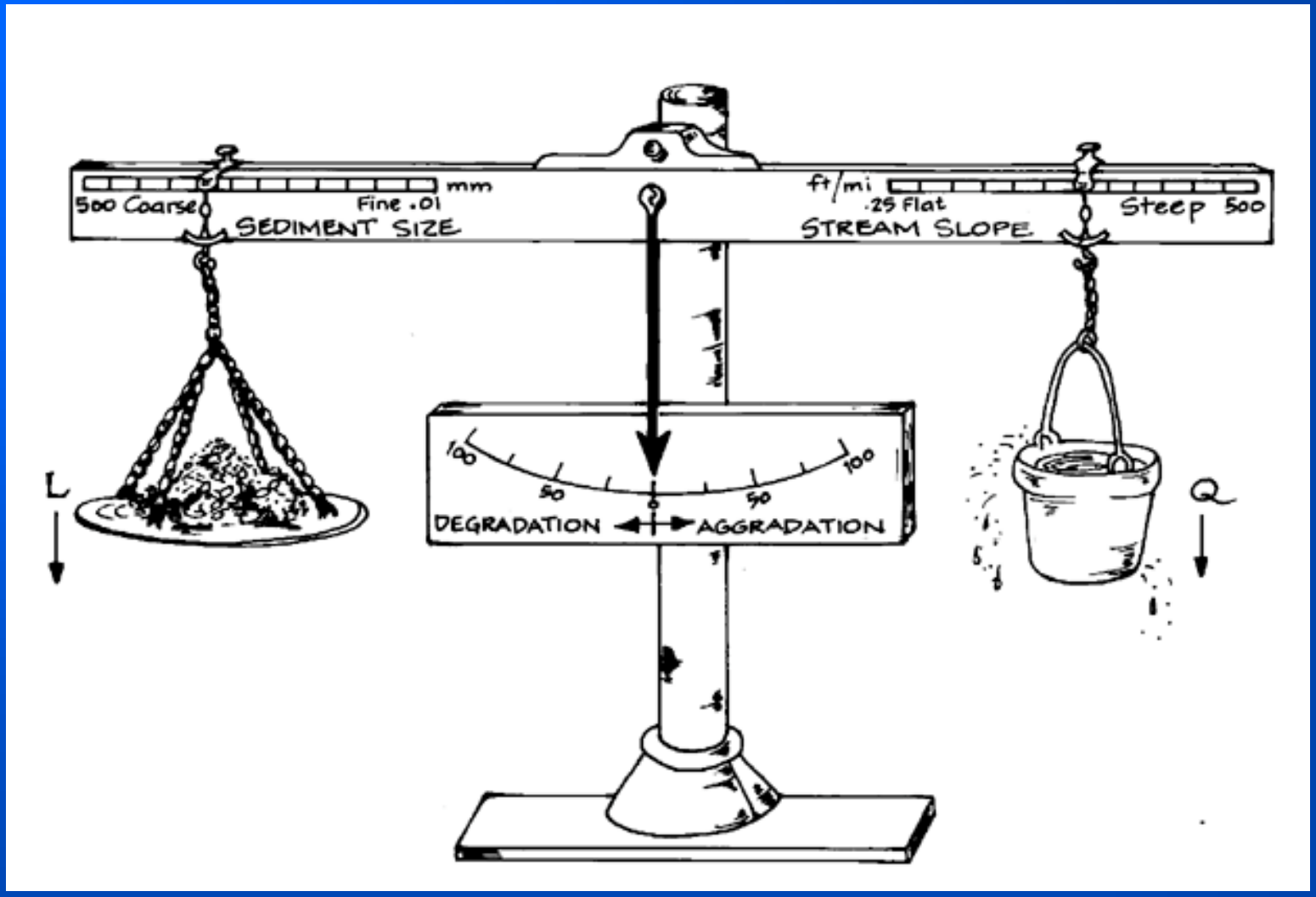
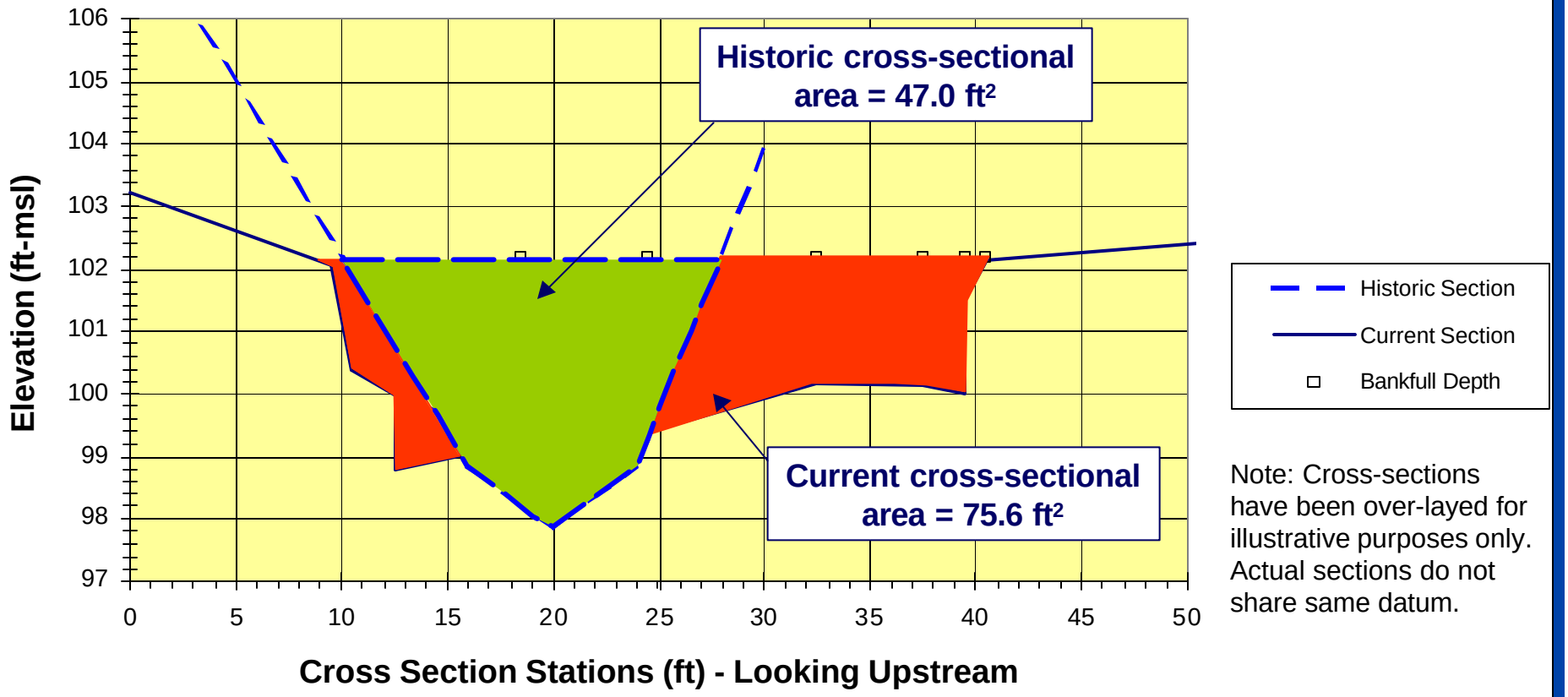


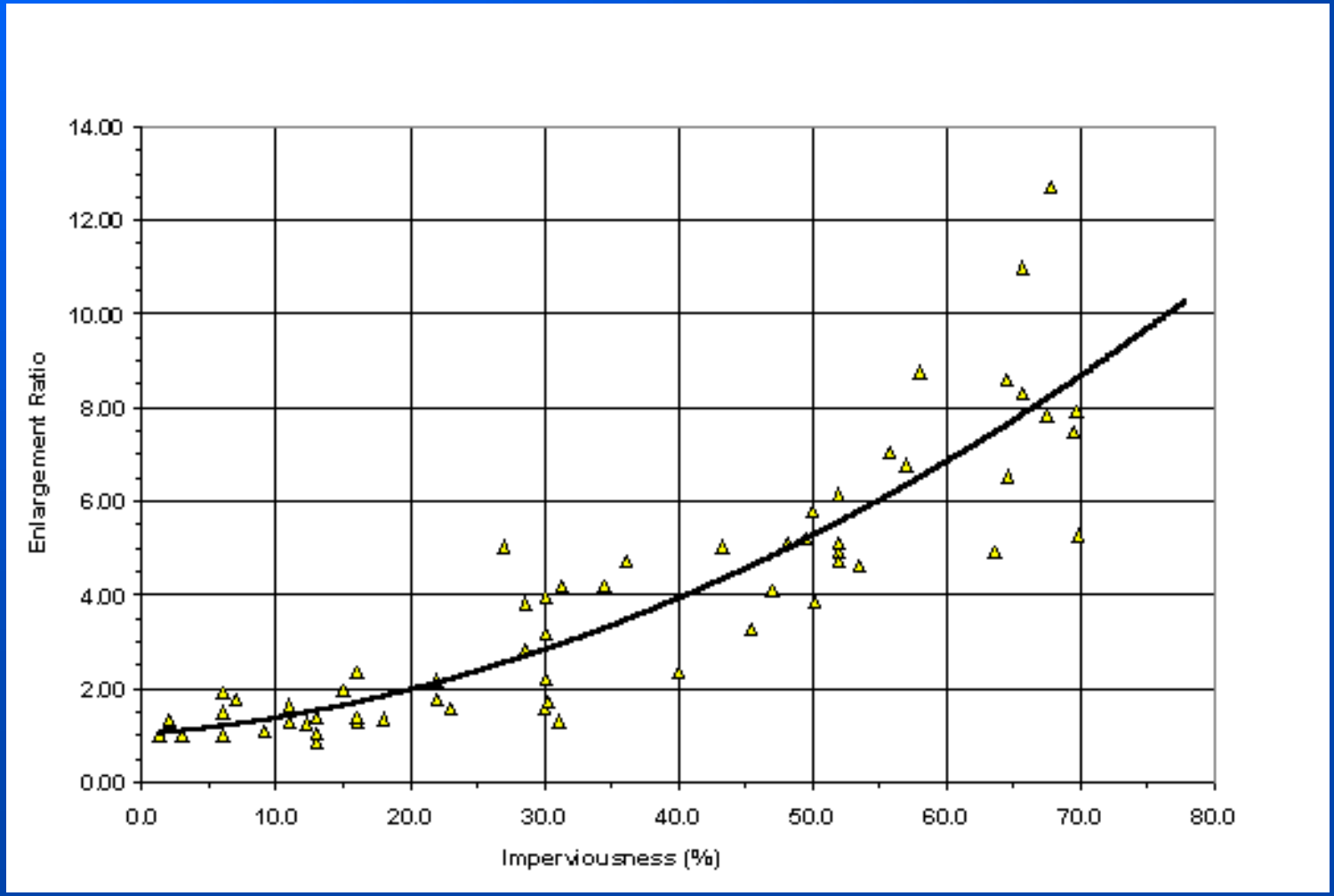
Sediment Load and Size Balanced Against Stream Flowrate and Slope (Source: adapted from Lane, 1955)

Comparison of Historic vs. Current Cross-Sections at Station POT1

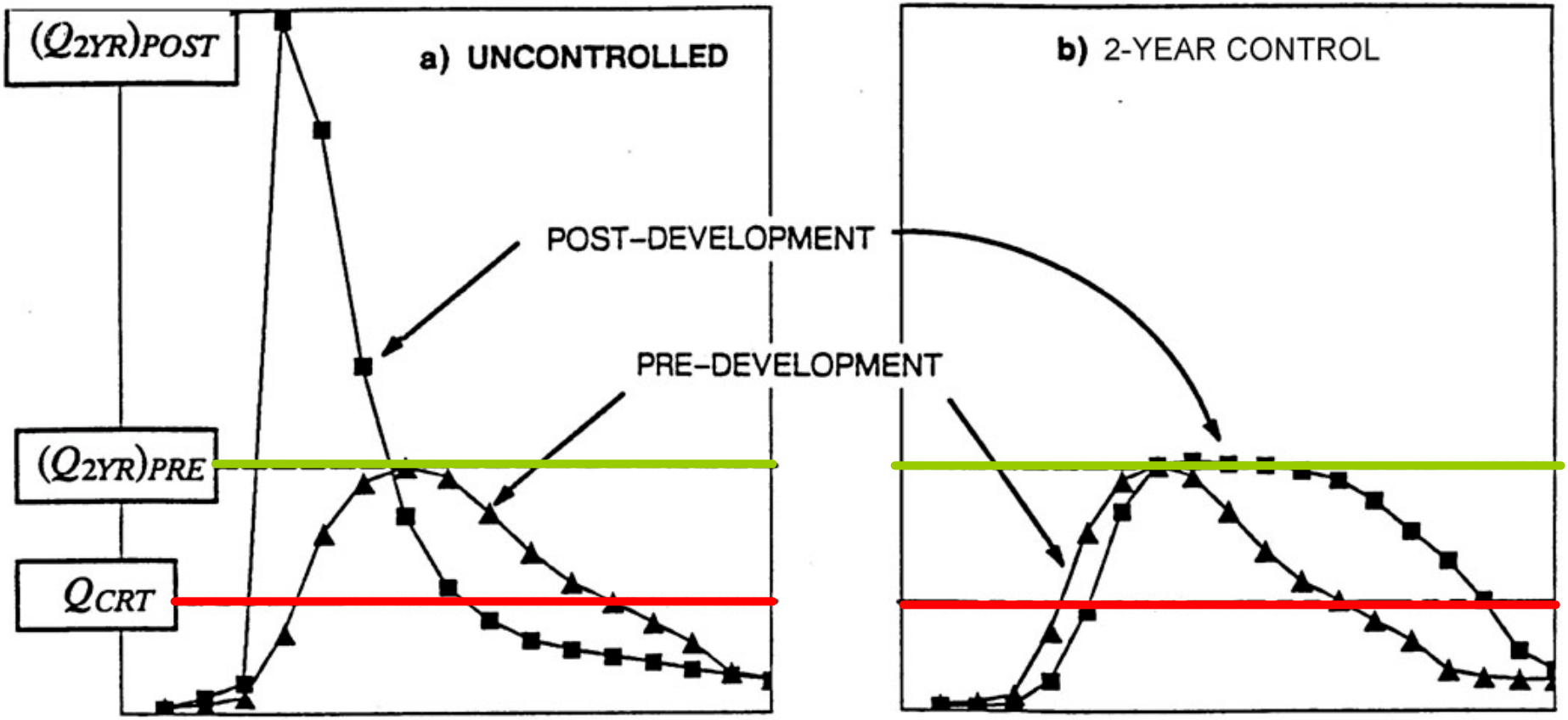


Note: Cross-sections have been over-layed for illustrative purposes only. Actual sections do not share same datum.

Channel Enlargement as a Function of Impervious Cover



Conventional 2 Year Peak Flow Control Approach



LEGEND

Q_{CRT}	FLOW AT WHICH SEDIMENT TRANSPORT IS INITIATED	PRE	PRE-DEVELOPMENT
(Q_{2YR})	2 YEAR RECURRENCE INTERVAL PEAK FLOW RATE	POST	POST-DEVELOPMENT


Source: Leopold, 1994

Channel Protection (Cp_v)

Criteria: reduce erosion in downstream channels by detaining bankfull and sub-bankfull flows

- Traditional 2-year criteria has not achieved this goal

- Proposed Criteria:
  - 12 to 24 hr detention of the 1-yr, 24-hr storm (between 2.0-2.4 inches)
  - Distributed Runoff Control (i.e., site-specific geomorphic analysis)
- Requirement does not apply to:
  - Sites with less than 1 acre of impervious cover
  - Direct discharge situations